



RESPONDING TO CLIMATE MISINFORMATION IN VANCOUVER: BEST PRACTICES FROM LOCAL GOVERNMENTS

Prepared by: Nicolas Côté, Ian McAuliffe, Duo (Lea) Pan, Xinyu (Becky) Zhang
Developed for the City of Vancouver



THE UNIVERSITY OF BRITISH COLUMBIA
School of Public Policy and Global Affairs



ACKNOWLEDGEMENTS

Land Acknowledgement

We are grateful to be able to work on the unceded traditional territories of the x̣ẉṃə̣θ̣ḳẉə̣ỵəm (Musqueam), Sḳwx̣ẉụ́7̣mesh (Squamish), and sə̣liḷẉə̣ṭə̣ł (Tsleil-Waututh) Nations. These lands have been sites of knowing, learning, and living for time immemorial. Acknowledging the Indigenous Peoples of this land is particularly important when it comes to working on misinformation, as Indigenous knowledges have historically been dismissed and repressed by the Canadian state.

Acknowledgements

We thank the many individuals and organizations, from local governments to municipal networks and research centres, who have taken the time to share information with us throughout this project. Among others, we want to thank the City of San Diego, the City of Dallas, the City and County of Denver, the City of Philadelphia, the City of London (Ontario), the District of Squamish, the City of Toronto, the Resort Municipality of Whistler, the City and County of San Francisco, the City of Markham, the City of Austin, the City of Edmonton, the City of Regina, and the City of Surrey for their contributions. We also express our deepest gratitude to the University of British Columbia's School of Public Policy and Global Affairs and the City of Vancouver for their support in this project. We also recognize that this report does not necessarily represent the views of the aforementioned organizations.





CONTENTS

I.Executive summary

II.Introduction

III.Context

- Understanding Misinformation
- Key concepts around misinformation
- Counter narratives: Not Everything is Misinformation
- Locating climate misinformation in local governments

IV.Gathering Best Practices

V.What we found

- High-level findings
- Communicating Frequently and Consistently
- Using the Right Messages
- Expanding External Networks
- Directly Tackling Misinformation
- Building Resilience to Misinformation

VI.Recommendations

- Expanding External Networks
- Directly Tackling Misinformation
- Building Resilience to Misinformation

VII.Conclusion

EXECUTIVE SUMMARY

The City of Vancouver (CoV) has established itself as a leader in climate action, but recent polls have revealed a gap between the CoV's climate priorities and the public's understanding of certain initiatives, which may be attributed in part to the spread of misinformation about these local initiatives. The CoV is seeking best practices from experts and other local governments to address the issue of climate misinformation and boost public understanding and support for its climate policies.

This report relied on a literature review and 30+ in-depth interviews with climate leaders and communication & misinformation experts, including representatives from 15 local governments across Canada and the United States.

Studies of misinformation at the local level are still tenuous and local governments have tended not to be seen as central actors in the fight against this worsening problem of global scale. The CoV has the opportunity to take initial steps to address climate misinformation that may influence developments in dozens of other local governments across the world.

Such steps would include educating the public, building trust with key local rightsholders, collaborating with third parties to understand and engage the misinformation ecosystem, and communicating frequently, consistently, and honestly.

Six high-level findings emerge from this research project:

- Local governments across Canada and the United States all face misinformation about at least some of their climate initiatives and recognize it is an issue.
- Formal strategies to counter climate misinformation are mostly non-existent among local governments across Canada and the United States.
- Practices like sourcing, prebunking, and delegitimizing misinformation are still emerging, underutilized tools for local governments, brought into focus by the COVID-19 pandemic.
- Not everything is misinformation. Local governments should be flexible in allowing their residents to air their grievances and concerns, and should be careful not to be the arbiters of truth.

-
- The strength of local governments is in their ability to win ‘the ground game’, which means using multiple touchpoints with communities to share frequent, relevant, and trusted information, with messages that connect with the audience.
 - To rise to the challenge of a crisis that is only worsening, acting on misinformation requires local governments to position themselves to act in the short- and long-term.

Five key pillars of action should be pursued by Local Governments wishing to engage misinformation about their climate initiatives:

1. Communicate frequently and consistently
 - In a polluted information ecosystem, communication that is frequent and speaks to people’s needs and concerns is especially important.
2. Use the right messaging
 - Local governments should move beyond simply communicating the scientific consensus on climate change, into messaging that is locally based, and stresses the co-benefits to action.
3. Built strong external networks
 - The advantage of local governments is in their connections with networks of citizens who can help it move towards its climate goals.
4. Directly tackle misinformation
 - Local governments may choose to take on misinformation narratives and key spreaders head-on, ideally through partnerships with civil society actors.

5. Build resilience to misinformation

- As an emerging field of research, responding to misinformation needs to go beyond simply reacting to it in the short term, but also creating solutions to build strong communities that can resist it in the long run.





INTRODUCTION

Team Description

The Global Policy Project is a capstone consultancy project run by the UBC School of Public Policy and Global Affairs (SPPGA). It links students with clients to solve real-world problems. The Global Policy Project team working with the City of Vancouver (CoV) - between January and April 2023 is composed of four students in their second year of the Master of Public Policy and Global Affairs at UBC.

Nicolas Côté is an anthropologist & physicist by training with five years of experience in climate policy analysis and program development. Since 2020, he has focused on the challenges that misinformation poses to the implementation of new climate policies.

Ian McAuliffe is an Irish-born, Toronto-raised student who completed his undergrad at the University of Toronto. He has an interest in municipal affairs and community development. Ian has over six years of experience working in the government and non-profit sectors.

Duo (Lea) Pan completed her undergraduate economics studies at the University of Liverpool. She has two years of research experience as a research assistant in think tanks and research institutes. She has a keen interest in resources, energy, sustainability and health policies.

Xinyu (Becky) Zhang was born and raised in China and completed her undergraduate degree in economics at UBC. She has three years of government work experience in China and has an interest in global affairs and climate policy development.

Client Description



The client for this project is the CoV's Sustainability Group, part of the Planning, Urban Design and Sustainability Department. The Sustainability Group provides policy direction and oversight of the CoV's climate strategies, including the Climate Emergency Action Plan and the Climate Change Adaptation Strategy.

Vancouver is the largest city in British Columbia and has been addressing environmental challenges stretching back to the early 1990s. In 2009, the CoV committed to a decade-long effort to make Vancouver a greener place to live, work, and play, through the Greenest City Action Plan. In 2019, Council declared a climate emergency and directed staff to create the Climate Emergency Action Plan as a roadmap to drastically cut city-based carbon pollution; the Climate Emergency Action Plan was approved in 2020. The CoV's Climate Change Adaptation Strategy was first approved by the Council in 2012 and updated in 2018, and serves as the City's strategic plan to ensure Vancouver is prepared for the impacts of a changing global climate.

Project Description

Through the Climate Emergency Action Plan, the City of Vancouver (CoV) has set a bold climate target to cut carbon pollution in half by 2030. Implementing policies and programs to reach these climate targets requires building understanding and support among the city's residents. According to recent polling conducted by the CoV, Vancouver residents have a high level of concern about climate change and a strong desire for climate action at all levels of government, including local government. However, the polling results also reveal a gap between the CoV's climate priorities and the public's awareness and understanding of how certain policies work towards the CoV's larger climate goals. This limits the support for certain climate policies.

The Sustainability Group has invited the Global Policy Project team to assist them in identifying interventions to counter climate misinformation and find ways to communicate more effectively to increase public understanding and support for evidence-based municipal climate solutions.

These recommendations will be based on best practices undertaken by similar municipal governments, advice from communications specialists, and drawing upon other local resources and expertise.

CONTEXT

Understanding Misinformation

Information Disorder

“In today’s world, it is very easy to create, modify, fabricate and widely share different messages. The information environment is polluted in many ways. Even if the information itself is genuine, it might be used out of context and turned into a propaganda weapon.”¹ (Hive Mind, 2022).

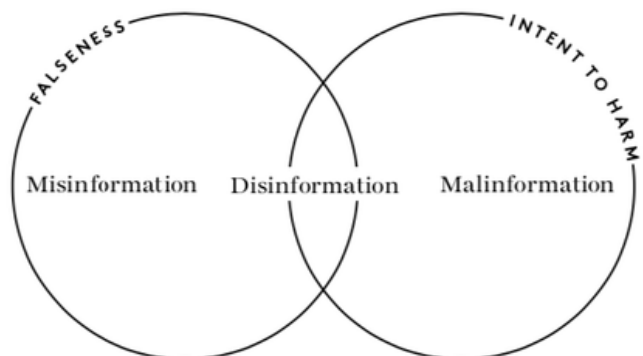
The contemporary information ecosystem we rely on to understand our world is increasingly polluted by falsehoods, misleading statements, and hate speech. While we are in ever greater need of unity to face global threats like climate change and environmental degradation, our media environment increasingly divides us. These confusing and divisive aspects of the new information ecosystem are gathered under the concept of Information Disorder. This concept is made of three main categories: misinformation, malinformation, and disinformation.²

Misinformation is misleading or incorrect information that is disseminated independently of the intent of the spreader. Misinformation sometimes refers to erroneous material, even as the information provider may be unaware that the information is wrong or misleading.

Malinformation is technically correct information that is disseminated with the intent to mislead, deceive, or harm.

Disinformation is false information that is disseminated with the purpose to mislead or deceive. It exists at the intersection of misinformation and malinformation.

It is important to tackle the overall spread of falsehoods. As disinformation and malinformation are limited to information spread with the intent to deceive or harm, this report centers on the concept of misinformation.



Source: Wardle, 2020

Relevant Types of Misinformation

Misinformation can take several forms. A report by Claire Wardle from First Draft defines seven types of misinformation and disinformation. The severity of the misleading information gradually rises from type one to seven.

There are 7 different types of misinformation mentioned here. Types 1 to 3 are most relevant to this project as types of misinformation where the intent of the spreader is not the focus, but rather the harms that come from it.

- Type 1: Satire or parody

While satire and parody can be regarded as an art form, it has dangers is mischaracterizing, or taking events out of context. As humorous posts get reshared and amplified, the post may lose grip of its original intention, becoming harmful and untrue.

- Type 2: False connection

When news media use sensationalist language to entice readers to click, but headlines, visuals, or captions do not support the content, this can contribute to confusion.

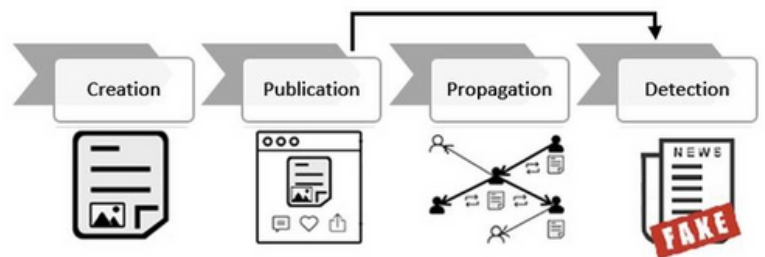
- Type 3: Misleading content

Misleading content manifests itself in numerous ways and is difficult to precisely define because it depends on context, nuance, and the number of references that are omitted.

Misinformation types 4 to 7 are focused more on the malicious intent of the spreader and are therefore not the focus of this report.

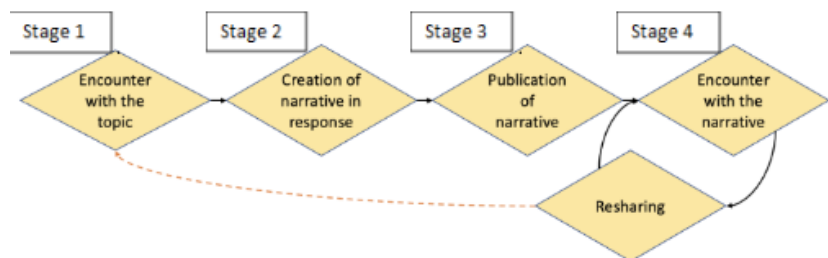
Lifecycle of Misinformation

We use the model of the lifecycle to understand how misinformation is created and spreads. A 2021 article by Ali Jarrahi & Leila Safari³ gives an example of how misinformation is born, spread, and detected on social media. They follow four steps: creation, publication, propagation, and detection, noting that detection sometimes comes right after the first publication, cutting out the propagation step.



Source: (Jarrahi & Safari, 2021)

While this initial framework is good to think about, we found it useful to further detail the steps to better understand the process and identify potential points of intervention. We developed an alternative life cycle, dismissing 'Detection', to describe the unimpeded spread of misinformation online:



This diagram broadens the idea of how misinformation spreads by adding a circular element that highlights how misinformation becomes self-sustaining.

Once a misinformed narrative gains traction, a circular feedback loop is created between stages 3 and 4. This re-sharing of misinformation can create communities or networks around these ideas, which become stronger the more the information is reshared. If interventions to correct it are not introduced in the first three stages of this diagram, dealing with the outbreak of misinformation narratives becomes incredibly difficult.

This feedback loop also provides new avenues directly into misinformation. Instead of encountering a topic in stage 1, with neutral information, people encounter the topic in stage 4, through an already established misinformed narrative. What this means is that people do not have the chance to critically engage with factual information about an initiative and their first encounter with the topic is already misinformed.

Why Do people Accept False Information?

Entities spreading misinformation have the benefit of not needing to prove anything. The power lies in the doubts and simplifications they can cast on often complex topics. It is easier to digest a simple misinformation campaign about a climate initiative than the complex science behind it. This is done in several ways: first, by creating a false binary on debates around climate change. This may look like taking a minority voice and comparing it to the scientific consensus to make it look like the discussion was a 50/50 split. Second, by relying on confirmation bias: the fact that people tend to seek out and accept facts that support their existing opinions or points of view while ignoring or dismissing facts that challenge them.⁴

People are more likely to accept false information if it is distributed or endorsed by a person within their own network, whom they know, respect or trust.

Misinformation networks are built on socialization, making it even harder for communication from local governments to correct misleading statements once they've taken hold in a community. Whether originally spread with the intent to deceive (in the case of disinformation) or not, once misinformation is endorsed and reshared by some community members, its misleading power rises exponentially.

Impacts of Misinformation

Misinformation can have negative effects on democracy, health, and the economy. It has been shown to increase public polarization and impede progress on important issues such as climate action. It can also cause significant personal and societal harm: in the context of the COVID-19 pandemic, misinformation has had deadly consequences. A 2023 report by the Council of Canadian Academies concluded that anti-vaccine misinformation was the cause of 2,800 additional deaths between March and November 2021⁵. Finally, misinformation can damage institutional credibility and reduce trust in information coming from government actors.



Local Governments' Emerging Role in the Fight Against Misinformation

While the impacts, causes, and solutions to misinformation at the global and national levels have been topics of enormous political and academic interest over the past decade, the study of misinformation at the local level is still tenuous⁶. Government interventions to strategically tackle misinformation, even at the national level, remain nascent. According to the OECD, as of 2021, out of 46 countries surveyed, only 36% national governments had developed strategies to engage misinformation at all⁷. The U.S. department of Homeland Security's creation of a 'Ministry of Truth' was met with such scrutiny and backlash that the Biden administration retracted the initiative. The initiative made the fact that governments should not pose themselves as the arbiters of truth eminently clear.

The current capacity of local governments to respond to misinformation may be mismatched to the size and scope of the decentralized information ecosystem that is largely influenced by social media. Local governments often do not have the resources, or the jurisdictional capacity to regulate social media sites, or larger misinformation actors. They are also vulnerable to stressors that come from natural disasters⁸. Provincial and federal governments have large, politically informed communications apparatuses developed to communicate complex policy changes while local governments are geared towards communicating service delivery. Yet, because of their comparative closeness to their citizens, local governments may have an advantage over more powerful administrations and be well positioned to circumvent the large polarizing debates that exist at the national level.

Because of this closeness, local governments are in a unique position to develop and implement policies where people can see the direct connection between government action and their lives⁹. Local governments can be key players in tackling misinformation in the same way as in the fight against climate change.



COVID-19 and Local Governments

COVID-19 has been a catalyst event in prompting local governments to act on misinformation. The pandemic has had major implications on post-COVID city planning and communication. During the pandemic, local governments had to be very conscious and careful with their communications and messaging, because of the prevalence of COVID-19 related misinformation. They had to communicate frequently and quickly about lockdowns, outbreaks, and vaccine clinics. They had to be nimble in their day-to-day communications, while also trying to develop long-term planning. Local governments and health authorities saw themselves competing with misinformed narratives around social distancing, masks, and vaccines. Because of this pushback, these local administrations had to do more to ensure the success of their policies. This urgent engagement with COVID-19 misinformation required governments to ensure frequent, consistent, and data-driven communication, empathetic and experiment with new empathetic yet scientifically sound policy approaches¹⁰

Key concepts around misinformation

The purpose of this section is to survey some of the key concepts of the literature on engaging with misinformation. These theories and tools are commonly mentioned in attempts to prevent the spread of misinformation, equip people with the tools to debunk misinformed claims themselves, and to bolster governments' communications capacities. They are presented here as a glossary and reappear throughout this report.

- **Tool: Debunking**

Debunking means correcting misinformation after it has been posted.

- **Tool: Pre-bunking:**

Pre-bunking relies on predicting what misinformation is likely to arise from a climate initiative and working the solution into communications before the misinformation has the chance to come out.

- **Tool: Inoculation:**

Inoculation is similar to pre-bunking. It involves helping people to build resistance to misinformation by exposing them to a small version of misinformation, as a forewarning, and ¹¹equipping people with counterarguments to refute the misinformation before it comes out .

- **Tool: Climate literacy**

Climate policy can be confusing, which is combined by people's limited awareness of the range and impact of climate solutions available today. Education efforts are critical to moving the conversation about the climate past simple perceptions of ozone erosion, sea level rise, or recycling.

- **Media literacy:**

Providing people with the tools and technical knowledge about media literacy, people can be empowered to navigate the world of information disorder.

- **Backfire effect**

In some cases, engaging with established misinformation narratives has the unintended consequence of creating a 'backfire effect' ¹¹, where people are even more resistant to believe new narratives and anchor their beliefs on the first piece of information they receive on an issue.

Counter-narratives: Not Everything is Misinformation

“Not everything is misinformation: some of it is just listening to resident's concerns”
-City & County of Denver

In an environment where truth has become politicized, genuine engagement with people's concerns is increasingly important to policymaking. Labelling different discourses as misinformation should be done very carefully, so as not to come across as the arbiter of truth. In this report, we introduce the concept of counter-narratives, which are perspectives that frame the problem in a different way for the purpose of swaying people towards a given point of view, without necessarily being false or misleading. Counter-narratives are foundational to a working democracy and a key part of the political process. Understanding the relationship between counter narratives, misinformation, malinformation, and disinformation, requires a careful look at the boundaries and overlaps between the 4 definitions.

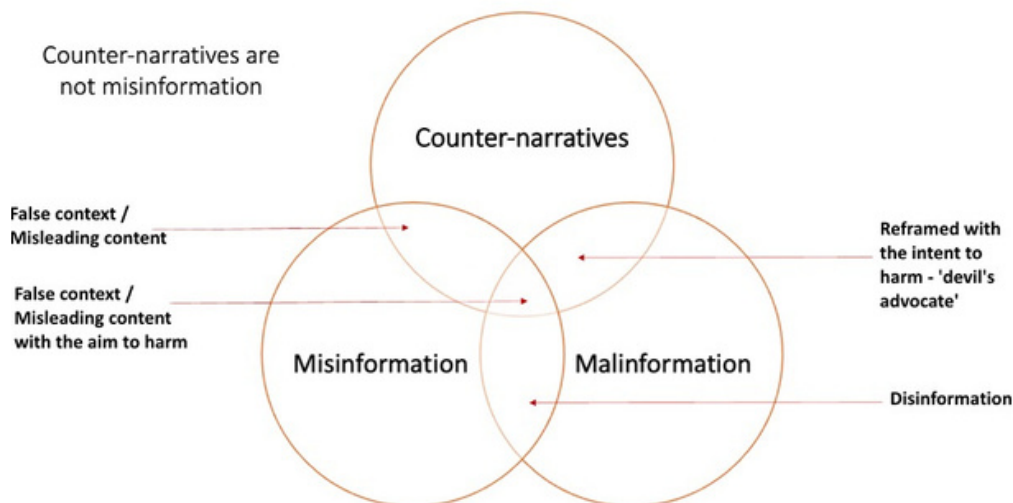
We define three types of counter-narratives:

- Some counter-narratives can be false – and exist at the intersection of misinformation and counter-narratives.

- Some counter-narratives can also be true be spread with the intent to harm – these exist at the intersection of counter-narratives and malinformation.
- Finally, some counter-narratives can both be false and spread with the intent to harm. These cases are where disinformation and counter-narratives intersect.

Example: Yellow Vests in France

When France's president, Emmanuel Macron, raised the price of gas in the hopes of limiting gas-based travel and using extra funds towards climate initiatives, a very large and salient counter-narrative developed among French people affected by the initiative. Many believed that the tax placed a disproportionate burden on the working and middle class, while also putting extra pressure on people living in rural areas who felt they were more dependent on gas-powered transportation. While these narratives are opposing the tax, they are not false and provide real critiques based on how this may affect people. Labelling these groups as spreaders of misinformation would likely build long-term mistrust and miss the necessity to engage with them about their grievances.



How to identify the difference between Counter-narratives and Misinformation?

There is considerable overlap between counter-narratives and misinformation. Counter-narratives are any argument or opinion that goes against a certain policy initiative, for any number of different reasons. As mentioned, these counter-narratives may be based on truth or fiction. When these arguments are based on fiction, it has crossed the line into misinformation and greater information and engagement are needed in order to counter the misinformation. But there are other instances where the counter-narratives are legitimate and an important part of the policy discussion. This counter-narrative classification is important so as not to fall into the binary of classifying and denouncing public discourse that does not agree with the initiative of the policy as misinformation. Misinformation is certainly on the rise, but an over classification of counter-narratives as misinformation could have detrimental long-term effects on eroding public discourse and trust in government.

The line between misinformation and counter-narratives can be far too thin for governments to take on the role of arbiter. Local government engagement with misinformation must walk the tightrope between respecting free speech and democratic dissent, and exposing clear falsehoods when they harm public health or scientifically sound public interests. As an example, in 2018, Human Rights Watch (HRW) recommended that the German government promptly repeal a law that compelled online social media platforms to remove hate speech, stating it could lead to “unaccountable, overbroad censorship”. According to HRW, the law was a dangerous precedent for other governments looking to tackle misinformation not only by forcing companies to make difficult decisions on free speech on their behalf but by failing to “provide either judicial oversight or a judicial remedy should a cautious corporate decision violate a person’s right to speak or access information”¹². Those concerns were echoed by the European Parliament in 2021¹³

Throughout this research, we have come to the conclusion that misinformation is a complex social problem not requiring a pinpointed definition: there is no perfect definition separating counter-narratives and misinformation which could be applied across all contexts. Misinformation is not a definition that can be perfectly theoretically sharpened but rather needs to be taken in practically, acknowledging a grey zone between the two concepts. Attempting to tackle the activity in this grey zone bears the risk of over-regulating and comes at the expense of difficult but important conversations.

Example in Context: A City has proposed a new bike lane

Misinformation: Residents of one neighborhood express their concerns on social media that additional bike lanes will slow down emergency vehicles on the road due to congestion based on their opinion that it would and not on any specific information they are relying on

Counter-narratives:

- An article published in a local newspaper argues that bike lanes are not the best use of public funds
- A community organization argues that new bike lanes should not be built in their neighboring because it would ruin its character
- A neighborhood walking group opposes the bike lane and wants to see the space used for wider, more user-friendly sidewalks

Disinformation: A community organization posts on their blog that new bike lanes will cause the property values of surrounding areas to drop based on a study they cite. It is later found that this study was heavily funded by groups connected to the Canadian automotive industry.

Malinformation: A known extremist group posts on Facebook that bike lanes are part of the liberal agenda

Locating climate misinformation in local governments

Local governments can face climate misinformation about any of their climate-related initiatives, from bike lanes to subway extensions, densification, parking permits, or home retrofits. One salient example is the 15-minute cities controversy that emerged in the winter of 2023, starting in the City of Oxford and spreading far and broad.¹⁴ It is a case study on how misinformation can affect local governments in the contemporary information environment.

15-minute cities/neighborhoods, as conceived by Colombian urban theorist Carlos Moreno, are projects that have been gaining popularity all over the world as local governments are looking to make their communities more sustainable and more livable. What they propose is urban planning where all basic needs such as food, healthcare, education, work, and entertainment are located within a 15-minute walk, bike ride, or public transportation trip from a person's home. This has the benefits of reducing traffic, car dependency, and carbon emissions while increasing local businesses, social connection with the local community, as well as mental health.¹⁵

This seemingly well-planned and nonpartisan initiative has been at the center of much misinformation around urban planning first in Oxford, United Kingdom before spreading to other governments like Edmonton, Toronto, or the County of Essex, ON.¹⁶ The 15-minute city narrative has been co-opted by conspiracy theories and disinformation¹⁷, which is hurting the real policy discussions that cities should be having with their residents about the misconceptions, or counter-narratives that people have.

The main conspiracy arguments against 15-minute cities rely on the narrative that this planning policy is part of a larger government plan to monitor residents and limit their movements. The central concept of 'climate lockdown'¹⁸ was pushed by right-wing think tanks and media figures, and further spread by extreme online communities like QAnon or the Great Reset. On the other hand, there are other more valid criticisms, like the worries of ghettoization and damages to downtown cores, which are being overshadowed by conspiracy arguments.

Local governments found themselves unprepared to respond to this rise in extremist misinformation and simply issued statements at public meetings or tried not to engage with conspiracies at all by fear of fanning the flames.¹⁹ As these extreme reactions unfold in Canada, local governments find themselves suddenly faced with the necessity to reckon with an intensity of local climate misinformation unlike anything most have seen until now. Many will likely want to inquire how to engage this misinformation in the future, how to debunk incorrect claims, increase citizens' media literacy, and how to communicate about policies in a savvy manner.



Gathering Best Practices

This project is driven by its case studies. We wanted to find best practices taken on by local governments across the United States and Canada to tackle misinformation about their climate initiatives, their strategies for engaging with it, and their communication strategies. We interviewed municipal staff from the climate, environment, sustainability, and communications teams of 15 different local governments.

We also spoke to academics who work in the fields of climate communication, misinformation, and local governments, and reviewed the literature surveying on local governments tackling misinformation. We read research from climate experts, communication experts, city planning and urban design experts, as well as papers on misinformation and information ecosystems. Overall, However, while engagements with misinformation and local government climate action were widely studied, we encountered very few publications examining local governments' roles in engaging misinformation, even less so climate misinformation.

A scan of the Local Governments that we interviewed

In Canada, from West to East:

1. Victoria, BC
2. Vancouver, BC
3. Surrey, BC
4. Whistler, BC
5. District of Squamish, BC
6. Edmonton, AB
7. Regina, SK
8. Markham, ON
9. Toronto, ON

In the US, from West to East

10. San Francisco, CA
11. San Diego, CA
12. Denver, CO
13. Austin, TX
14. Dallas, TX
15. Philadelphia, PA



WHAT WE FOUND

High-level findings

Six key high-level findings emerged from our conversations with local governments, expert interviews, and literature review.

- **First:** Every local government we interviewed faced misinformation about at least some of their climate initiatives and recognized it is an issue.
- **Second:** Despite recognizing misinformation as an issue, no local government had an explicit misinformation strategy.
- **Third:** Despite the lack of local misinformation strategies, the COVID-19 pandemic accelerated the rise of isolated practices like sourcing, prebunking and delegitimizing misinformation in local governments.
- **Fourth:** Most of our informants highlighted that the strength of local governments is found in their ability to 'win the ground game': using their embeddedness in local communities to share frequent, relevant, and trusted information through a large variety of touchpoints.

In most cases, municipal governments have not seen themselves as having the resources, the mandate, or even the authority to regulate the actors who create misinformation or those who spread and reshare this information on social media themselves. Local governments have the benefit of having access to communities that can mobilize people and create trusted networks which facilitate conversations and can create buy-in and advocates. Local governments are also the closest level of government to people and have the potential to embed themselves in local communities and engage with citizens by providing real information through their many touchpoints.

- **Fifth:** Not everything is misinformation. Local governments should be flexible in allowing their residents to air their grievances and concerns, and should be careful not to be the arbiters of truth .
- **Sixth:** Misinformation is a worsening crisis that requires long-term planning and mitigation.

Actions

We organize what we've seen local governments do to resist and engage climate misinformation into five key pillars of action:

1. Communicate frequently and consistently



In a polluted information ecosystem, communication that is frequent and speaks to people's needs and concerns is especially important.

2. Use the right messaging



Local governments should move beyond simply communicating the scientific consensus on climate change, into messaging that is locally based, and stresses the co-benefits to action.

3. Build strong external networks



The advantage of local governments is in their connections with networks of citizens who can help it move towards its climate goals.

4. Directly tackle misinformation



Local governments may choose to take on misinformation narratives and key spreaders head-on, ideally through partnerships with civil society actors.

5. Build Resilience



Responding to misinformation needs to go beyond simply reacting to it in the short term, but also creating solutions to build strong communities that can resist it in the long run.

Applying the five pillars of action

1. Communicate frequently and consistently



“We’re in a climate emergency. Emergency communication needs to be frequent, ubiquitous, and coherent” - Seth Klein

- **Communicate through multiple mediums**

While the communication budget of a municipality will not be able to exceed that of a multinational corporation aiming to spread its own narratives about climate action, local governments have a large array of communication tools and mediums through which to advertise various policy communication projects. Some include:

- Transit-shelter ads
- Bus route ads
- Social media, with wide social media ads campaigns
- Postcards sent out to all households across the city
- City newsletter
- Radio
- TV
- Open houses
- Fundraisers
- City Website
- Public parks
- Sporting events

Examples: City of Dallas, City of Victoria, City of Vancouver

The City of Dallas, for instance, regularly advertises its initiatives via their website, radio, TV, social media ads, news releases, and posters along bus routes.

To dispel the misconception that natural gas is a clean fuel, the City of Victoria developed a series of videos, and paid to circulate them as ads on social media and radio stations in 2022/3.

The CoV also makes use of a very large array of communication tools and mediums through various policy communication projects. Among others, they have used bus routes & transit-shelter ads, social media ads, newsletters, and even podcasts.

- **Climate/Sustainability Concierge**

Some local governments have begun setting up full-time employees tasked to answer residents’ questions about retrofits and other climate initiatives, known as climate/sustainability concierges. A climate/sustainability concierge can be an individual or a team of experts who provide information, guidance, and resources to help people make informed decisions that support sustainability and climate action.

Example: Capital Regional District

In 2022, the Capital Regional District (CRD) ²⁰ launched the Home Energy Navigator program to simplify home energy upgrades for single-family homes in the region. To support the program, it created an energy concierge position. The Concierge is available to answer questions, provide support, and give local expert advice and guidance to navigate residents' home energy retrofit problems.

Example: The District of Squamish

The District of Squamish designed a similar program in collaboration with the Community Energy Association and the Resort Municipality of Whistler, called the Heat Pump Pilot Program. ²¹ This concierge service is a “one-stop-shop” model that provides support to single-family homeowners' aiming to switch to electric air-source heat pumps (ASHPs) when their current carbon-fuel heating system reaches end-of-life/retirement. Citizens are informed and guided throughout the whole process, from the evaluation of the suitability of their home for a heat pump to ensuring they have the resources to maintain it, with the aim to overcome all the logistical hurdles that may discourage homeowners from installing an ASHP.

2. Use the right messaging



What makes a Good Message?

Climate communication goes beyond simply stating the facts: best practices for effective climate communication highlight the importance of crafting messages that relate to people's values, concerns and interests about their own life. This is especially important in a city as diverse and growing as Vancouver. A message is not a one size fits all tool. Climate communication research has shown that sharing effective information requires using messages that resonate with the target audience and refer to their values and emotions.

Climate messaging should be straightforward, simple, and accurate. The message should be conveyed in a manner that is easily understood by the target audience. The policy should be well-described, as well as its connection to how it works towards a larger climate goal. This means putting the policy in context and addressing the knowledge gap that exists between people's support for climate action and specific climate policy. The message should not only communicate facts but also motivate action. In addition, the message should be culturally sensitive, taking into account the audience's diverse backgrounds.

Key traits of an effective climate message

- Simple

A simple message is more easily understandable to a broader audience and is more likely to be shared and spread.

- Value-driven

Developing communication frames that connect to people's values are extremely important for evoking interest and buy-in on a certain policy.

Some audiences may relate about climate policy in terms of personal financial benefits, while others may adopt a national security frame, where the communication would speak to the benefits of getting ahead in new green technology for competitiveness in international security.

Two other important frames highlighted in the literature are the faith based-stewardship frame and public health frame²². The stewardship frame stresses our responsibility to our neighbor and the need to protect those most vulnerable to the effects of climate change in our community. A very relevant and recurring frame is a health frame, which would stress the detrimental health effects of climate change, and the pressures that climate disasters will have on hospitals and other healthcare services.

No single frame will reach every person or even every audience in a meaningful way, which is why a strategic and diverse communication approach must be taken to appeal to as many people as possible, across messages, platforms, and languages.

- **Clear and evidence-based**

Evidence-based messaging which clearly explains the logic behind an issue is more likely to generate public understanding and support. Presenting evidence to corroborate information can boost the public's understanding of climate issues and confidence in the local government's expertise.

- **Local**

To be most effective, visuals and statistics should be conveyed in the context of the local government where they are distributed.



They may reference well-known local places and depict how climate events will affect the local community and everyday life. By speaking in context and through shared values, local governments can create bridges between what people are interested in and what they're concerned about²³.

- **Emphasizes co-benefits**

The benefit of a stable climate is not enough of a motivating factor for most people. When a government's messaging includes co-benefits, it emphasizes how a certain policy or action will benefit not exclusively the climate, but also people, their communities, and other things that are important to them. Co-benefits stress that climate initiatives are not simply costly endeavors that local governments impose on their residents. Many of the local governments we interviewed testified that talking about co-benefits was one of the most effective tools to increase public support for a climate initiative.

Approaches highlighting health benefits and cost reduction were noted to be particularly effective. Talking about climate co-benefits can mean emphasizing the impact of the initiative on air quality, public health (in the near- and long-term), household savings, jobs and the economy, resilience against future local extreme weather events, or equity. To be maximally effective, these co-benefits should be presented in local terms. For instance, speaking about how much money a person may save, how much their gas bill may go down, or how much a lack of action may cost them in their daily lives. Local governments often weigh their cost-benefit analysis in the millions or billions because of large climate processes over time. This is likely too abstract to create a sense of urgency and too distant from the size of most bank accounts for a person to feel directly affected. Costs should be shown in terms of how it affects people in very tangible ways like rent payments, property taxes, transportation costs or monthly bills.

Example: District of Squamish

When the District of Squamish tried to expand the uptake of heat pumps, they emphasized tax rebates, cheaper gas bills, and how much warmer their homes would be. Builders were hired by the District to do in-home consultations for 50 participating houses that were interested in retrofitting. The program was immensely successful. When people asked, “what’s in it for me?”, city officials and builders had specific answers to point towards a cheaper gas bill.

- **Culturally sensitive**

Messages that are sensitive to the range of cultures in a community can reach a broader audience, reach audiences with diverse racial or linguistic origins, and prevent misunderstandings. Moreover, when government messaging demonstrates understanding and respect for diverse cultures, it builds trust. This is especially crucial for populations who have been traditionally denied access to government services and policies, or that have been marginalized in other ways.

- **Multilingual**

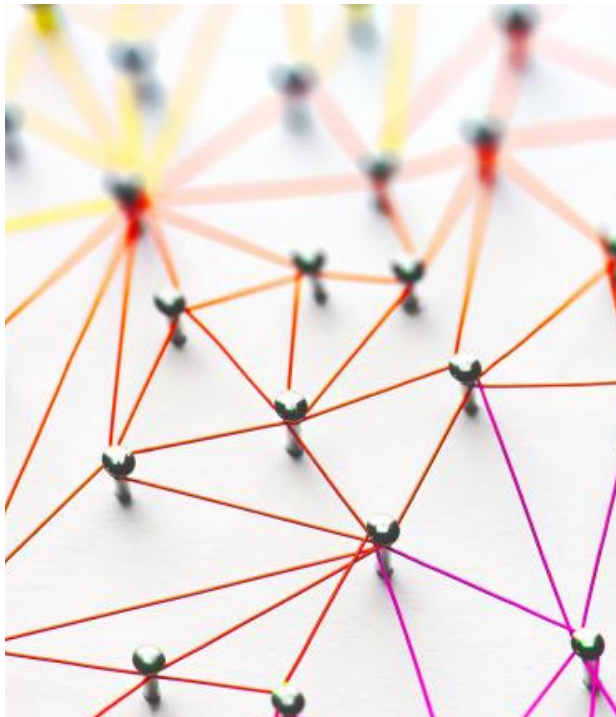
Most of the local governments we spoke to whose jurisdictions were home to large numbers of non-native English speakers and immigrant populations highlighted the importance of communicating in several languages. Many published their flagship climate plans in multiple languages (The City of Austin’s Climate Equity Plan is available in English, Spanish, Vietnamese, Mandarin, Korean, Burmese, Arabic, and Hindi) but highlighted the lack of resources needed to make other critical climate communications multilingual.

3. Building strong external networks



“Even when confronted with direct evidence of climate extremes, the main influence on people’s attitudes will still be the view of the people they know and trust.” -George Marshall, 2014

Climate communication expert George Marshall notes that when it comes to climate change, the messenger is often more important than the message itself. Our interviews with local officials highlighted that building networks of external partners and communicators is both a less resource-intensive and more effective way to share climate information.



For local governments, this often means building on the existing communication ecosystem and networks (NGOs, environmental groups, etc.) and continuing to broaden trusting collaborations. Best practices from the local governments of San Francisco, Denver, Victoria, the District of Squamish, and the Resort Municipality of Whistler provide useful insights into how to implement effective collaboration and partnership strategies to address climate change misinformation.

In this section, we highlight the key types of external partners we found local governments engaging with to build support and understanding for climate initiatives. We then present some of the best practices which the local governments we interviewed followed to build strong external networks.

- **Valuable partners**

Our research distinguishes between three categories of important partners for local governments wanting to build support and understanding for their climate initiatives:

- Specialized experts – like electricians, car dealerships, or financial advisors. These are the actors who hold the most influence on citizens’ final decisions about changes around their homes, transportation, or their daily lives.
- Trusted messengers – like doctors, faith leaders, academics, local media, or environmental NGOs. These are trusted community actors that should be engaged with to share information about the local government’s climate initiatives.

- Collaborators – like federal, provincial, or other local governments. These are external stakeholders that can help local governments build capacity for communication and outreach and support strategic efforts to tackle misinformation.

- **Specialized experts**

Experts in a specific fields like firefighters, welders, HVAC personnel, nurses, doctors, electricians and so on are likely to be the most trusted and impactful influences on people when it comes to making decisions about their homes, their heating systems, or their money. We find local governments engaging and developing information sessions with leaders from different trade sectors so that they may advise residents to make more climate friendly decisions about their homes, their cars, and their daily lives. In some cases, local governments have paid builders or plumbers to offer free consultations for people who are interested in doing the retrofitting project to their homes. This spans from small energy-saving projects to installing solar panels or heat pumps. Some successful examples that we came across in our findings are:

1. Firefighters

There are co-benefits from sustainable materials in a person's home also being more fire retardant or improving the structure/long term value of the property. Having firefighters stress these co-benefits, through their expertise, adds to their credibility and is a trusted messenger.

2. Plumbers

We have heard of successful programs where a local government will offer free consultations with plumbers and other builders for people who are interested in retrofitting their homes with things like heat pumps. Plumbers can speak to the benefits of lowered utility bills, as well as education about common misconceptions about home retrofits.

3. Car dealerships

Including people with knowledge of electric vehicles (EVs) in open houses or city events can ease the mind of people who are concerned with the feasibility of switching to an EV. These concerns are often related to a lack of range of EVs and a lack of charging stations, which is often not the reality as these services are increasingly becoming readily available. These benefits can be co-communicated with city officials explaining preferential parking for EVs, and tax rebates.



Example: City of San Diego

The City of San Diego has recognized the importance of building trusted relationships with labour unions, who are particularly important partners because they can have an influence on City Council. Also, they are important and trustworthy communicators about energy and home retrofitting decisions. Their engagement strategy relies on two pillars: Build trust and relationships: Through one-on-one meetings, workshops and events, the San Diego City Council has emphasized the importance it puts on building trust-based relationships with labour unions. These events bring together city officials and union representatives to discuss climate change issues and share information.

Provide education and training: The City of San Diego provides education and training to unions to help them understand the science behind climate change, the impacts of climate change on the city, and the strategies the city is implementing to address climate change. This is done through workshops, webinars, and training programs that are tailored to the needs and interests of each union.

As this relationship grows and becomes more embedded, prolonged engagement has had a significant impact on dispelling climate misinformation and building trust in the City's climate policies and initiatives.

- **Trusted messengers**

People are more likely to act on something difficult if it is communicated through someone that they trust. Both climate communication scholarship and local government best practice highlight that certain social actors are best positioned to be trusted messengers of climate information.

1. NGOs and Community Organizations focused on climate

Cooperation with NGOs is an important part of many local government's climate initiatives. Most ENGOs have share goals with local governments on the issue of climate change, and they want the government's support in carrying out their environmental protection work. NGOs and community organizations are well-positioned and generally have a good understanding of the local context and what conversations people are having.

Example: City and County of Denver

The City and County of Denver has implemented an approach to pursuing climate action that allows them to share the large task of climate communication with NGOs and through this they have found that they can more effectively prevent misinformation. One of the most intriguing aspects of this approach is the decentralization of communication. The City of Denver has allocated funds and dedicated staff to work on their climate action initiatives, including a de-centralized communication strategy. There are 45 people at CASR and 8 at Outreach Denver, which is the second climate protection fund in the country, and they generate over \$40 million annually. The City of Denver partners with community-based organizations to spread outreach materials. Several organizations in Denver are advocating for and pursuing home and building electrification alongside the city's efforts. Denver also partners with contractors, who provide technical assistance and educational support. Through decentralized communication that is coming from multiple channels, local governments can successfully increase the credibility of their climate policies. This has helped build trust among the public, increased support for initiatives, and improved the inclusivity of access to climate information.

2. Trusted professionals

Climate communication research highlights²⁴ that the actors that are most trusted (by Americans) when it comes to sharing information about climate action are:

- Climate Scientists
- Health experts
- Faith leaders
- Meteorologists
- University leaders

These categories of actors are widely²² recognized as key climate communicators .

3. Local Media

Local media serves as a nexus for all that is going on in local communities and their local governments. Increased collaboration with high-quality local, community or independent media operations can help create a healthier information ecosystem. It can also foster more local news media participation in the dialogue around the local policy. In the local governments we spoke to, these partnerships of local governments with journalists & news outlets are critical not only to share accurate information when an initiative requires it but also to correct falsely reported information in a timely manner, as highlighted earlier.

4. Young People

“Young people are increasingly aware of the challenges and risks presented by the climate crisis and of the opportunity to achieve sustainable development brought by a solution to climate change”.²⁵ Young people are a motivated and versatile group who are well-connected to emerging trends and social media. By partnering and giving opportunities to youth councils, youth climate groups, and teachers, local governments can engage diverse and motivated groups, often committed to acting on climate, and well-connected to emerging trends and social media.

As part of our literature review, we found that youth are key actors in intergenerational communication about climate change and climate action. High school and post-secondary students can be very effective in reaching elderly people in their family, people with mistrust of the government, or people affected by the digital divide.²⁶ Specifically, young people who are the first generation to attend post-secondary education can be a trusted bridge between their families and progressive local institutions.

• **Collaborators**

1. Other Local Governments

Another strategy to bolster a local government's climate communication and build community trust is partnering with relevant neighboring local governments. A single city is an easy target for misinformation campaigns and may be susceptible to political or personal attacks. Local governments that teamed up and developed joint-venture action plans or initiatives with neighboring local governments found that this approach created a more accepted set of ideas that was embedded across multiple jurisdictions. One possible reason is that people sense that they are not the only ones acting or sacrificing for climate initiatives. As one our interviewees pointed out, cross-governmental collaborations can improve the attitude behavior gap, where people are less likely to act if they feel the responsibility is not shared. This also gives local governments the chance to learn from neighboring jurisdictions.

Example: City of Victoria

The City of Victoria has been collaborating with other local governments in the Capital Regional District, particularly the District of Saanich, to increase the frequency and reach of their messages and show the public that there is a larger coalition behind potentially controversial initiatives. A key opportunity lies in the fact that some key stakeholders, like builders and other labour unions, work across municipal boundaries in the region.

2. Federal and provincial governments

Few of the local governments we interviewed directly collaborated with their national governments to tackle misinformation. However, some have benefitted from sources of funding that the Canadian federal government has released to support organizations engaging misinformation. Between 2019 and 2020, through the Digital Citizen Initiative,²⁷ the Canadian government allocated \$7 million to 23 public and civil society-led projects that strengthened citizens' critical reflection about online disinformation.²⁸ In 2022, it distributed an additional \$2.5 million to organizations that help people identify misinformation and disinformation online.

Provincial governments in Canada have been slower to commit similar funding to engage misinformation.



Example: City of Toronto

The City of Toronto received \$40,000 in funding from the Government of Canada for a project focused on 'Social Inclusion Through Facts During Covid-19.' The project aimed to combat misinformation about the COVID-19 pandemic, especially when it comes to vulnerable populations such as newcomers, Indigenous peoples, and racialized communities. Through educational materials and outreach efforts, the project promoted accurate information and combatted the spread of false or misleading claims.

Best practices for building strong community networks

- **Outreach from City staff**

Outreach from City staff is an important aspect of promoting initiatives and engaging with the community. It refers to the efforts made by city officials and employees to engage with the community, promote public awareness of issues, and foster cooperation between the government and the public. Engagement in the policy design process is ubiquitously recognized as a critical practice to develop good policies, reflect community perspectives, and to build buy-in for the initiative. We heard from local government representatives that the most salient message was often one delivered in person, and in casual conversation with the community.

Proactivity matters both for outreach and engagement. A major theme that emerged from our interviews is that local governments need to be more 'campaign-ish'. What this means is to avoid the drastic drop in proactive community outreach that occurs once election day has passed. This presents a challenge to the risk-averse culture that often dominates local governments, yet it is a challenge that local governments must take on if they want to build enough trust and capacity to avoid seeing their communications being drowned out by the contemporary information ecosystem.

A second important aspect to outreach is being physically present. With the events of COVID-19, many initiatives and events went online.

As we spoke to representatives from different local governments, they stressed that we may have become over reliant on online events, in lieu of face-to-face interactions. While they are often the most convenient or inclusive setting for an event, the importance of in-person events cannot be understated, and the opportunity to being physically present where possible is crucial.

Example: City of Dallas

There are five full-time staff members dedicated to outreach in the sustainability office at the City of Dallas. Some of the key outreach practices by Dallas staff include:

- Getting out of the office and into the community: Employees are encouraged to spend more time in the community, at events, and interacting with people face-to-face. City staff also provide presentations and workshops on climate change and are available for one-on-one consultations to answer questions.
- Reach out to experts across the city: In Dallas, City staff are encouraged to reach out to experts in various fields to seek guidance, advice, and support on various matters related to their work. This helps staff to gather more information and make more informed decisions, as well as build relationships with professionals in different industries.

The Dallas Sustainability office also created a 'meeting in a box' toolkit which includes a presentation, and they provide to their partners to allow them to facilitate meetings about the City's climate initiatives.

Example: City of Victoria

The City of Victoria has Neighbourhood Liaisons who attend Neighbourhood Association meetings to answer questions and inform residents of City initiatives. The Climate Action Program has also presented to the Neighbourhood Associations to communicate information about climate action in Victoria. In addition, each City Councillor is assigned to specific neighbourhoods and attends Neighborhood Association meetings.

Example: City of Philadelphia

Philadelphia is a large city with an old housing stock, that needs significant investment. The median age of single-family homes is 80-100 years old, and a majority of these homes need weatherization and support with a transition to clean energy technologies. The City is exploring a segmented approach, such as tackling fuel oil or electric resistance for heating as immediate areas of action. The City helped set up Neighbourhood Energy Centers in several marginalized and vulnerable communities across the city to provide energy services to and engage residents towards adopting energy efficiency and clean energy technologies.

Example: City of Regina

The City of Regina makes a point of being as proactive and present to many community meetings where possible, to listen to concerns, share information about their programs, get feedback, and answer questions.

• Community Leaders' Networks

The practice of creating groups of climate and sustainability leaders from a variety of community and industry groups is widely adopted across the Canadian and American local governments we interviewed. These community leaders' networks are an important bridge between the local government and key local groups, which allow local government staff to hear from a variety of voices from the community, develop buy-in and get feedback on their policies from experts with a deep knowledge of local issues, as well as share information about municipal initiatives. In several cases, these groups also allow local governments to communicate their climate initiatives more broadly if the community leaders are willing to reach out to their networks.

Example: City of Vancouver

In 2020, the CoV created the Amplifier Network – a body of 75 community groups, NGOs, and industry representatives, to receive feedback and keep community leaders informed as climate proposals were designed and sent to Council. These meetings improve the City's initiatives and allow leaders to communicate the right information to their constituents. City staff provide the Amplifier Network with content packages, including high-level key messages, which members are free to share if they will.

Example: City of Edmonton

The City of Edmonton created the Environmental Transition Leadership Network²⁹ in 2016, including builders, bankers, and educators, for a total of close to 300 members. They are invited to gather four times a year for City staff to share information on key programs and to provide feedback.

Example: City of Toronto

The City of Toronto created the Climate Advisory Group³⁰ in 2022. It is composed of 26 local climate leaders, selected from nearly 300 applications, representing diverse industries, communities, ages, and backgrounds. They will meet quarterly for three years and advise the City on implementing the Transform to Net Zero Climate Action Strategy. Some of its members include senior members of Pollution Probe, the David Suzuki Foundation, Enbridge Gas Inc., the Toronto Environmental Alliance, and RDH Building Science, as well as activists, grassroots leaders, and independent citizens.

Example: City of Toronto

Through the Neighbourhood Climate Action Champions program, the City of Toronto seeks to partner with individuals willing to be local climate champions and engage their community residents on environmental issues and inspire climate action. Participants receive training on climate science, communication, and action with relevant local details. With the help of a toolkit provided by the City, they identify specific GHG reduction goals for their neighborhood and develop a plan to reach these goals within the community Neighbourhood. Climate Action Champions are compensated with a \$500 honorarium and are required to put in four to five hours per month (to a maximum of 50 hours) towards outreach and project design & implementation. They meet with City staff every month to share their findings and receive support and feedback. Some projects have included supporting the uptake of cycling in the Agincourt area, via safe cycling workshops, bike route planning, and bike repair hubs. Other projects have created an 'eco buddies' program which fosters mentorship on climate and environment. Another example is setting up a library of outreach equipment for resident to use in their outdoor community events.

• Community Climate Champions

Building a network of climate 'champions' in the community is a winning formula. Community champions are individuals, engaged through voluntary participation or through an external organization, who engage their local communities and neighborhoods about local climate goals. Climate champions are most often recruited because of their embeddedness and trusted position in their communities.

• Thought leaders

Thought leaders are the actors who give media interviews, write op-eds, and overall offer an expert take on the City's initiatives in public settings. Thought leaders can be City staff, academics or other external experts.

There are many examples of local governments working with thought leaders on the roll out of new policy initiatives. For example, after the Greenest City Action Plan was released, the CoV set up an Action Group of thought leaders who were often tapped into to talk about municipal climate initiatives.

The key to success with this group of actors is in the coordination to ensure that they are ready to give interviews and quotes about municipal priorities and initiatives as they are rolled out.

One of the challenges to achieving this in the local governments we spoke to is that it is rarely integrated into official job descriptions: everyone at City Hall already has files to work on, which leads to a real lack of capacity for thought leadership and engaging with the media let alone recruiting external experts and briefing them on new initiatives before they get released. Moreover, thought leaders should be diverse, which can be made difficult if senior municipal staff are themselves lacking diversity.

- **Community grants**

Several local governments make use of community grants programs to fund external organizations who may lead outreach programs of their own in their local communities. This approach reinforces ties with community organizations, allows municipal staff to delegate outreach to third parties, and expands the reach of the local government's climate communication efforts, as organizations embedded within a community engage hard to reach groups and represent a well-trusted voice.

Some best practices to develop these community grants include building buy-in with target groups about local government climate initiatives through workshops or engagements before offering community grants. Procurement rules requiring local governments to give grants to recognized organizations may create challenges to the distribution of sustainability community grants. As a response, staff may target community grants towards larger organizations that may then subcontract smaller groups to carry out the outreach for them.

Example: City and County of Denver

Community organizations and NGOs in Denver are provided with grants by the local government for projects such as tree planting in communities that are prone to high temperatures. One specific example is an NGO-led program called Promotoras³² that teaches climate awareness and communication in people's native languages and in their local neighbourhoods. The Promotoras' approach has been widely adopted by sustainable development organizations, particularly those focused on food. Another NGO-led program funded by the city trains 18-year-olds to go door-to-door and talk about energy efficiency. It is a successful example of using young people as effective messengers, while also providing them with skills and compensation.

Example: City of San Francisco

The San Francisco Environment Department has been awarding grants to community-based organizations (CBO's) to implement zero-waste projects for nearly a decade. Funding for these grant projects is supported by waste collection fees and are intended to enhance community capacity to conduct community focused waste reduction activities. Recently, due largely to community advocacy, new general fund dollars were provided to the department which have been allocated to new CBO grant programs that expand beyond zero waste and will support of the City's 2021 Climate Action Plan. In addition to zero waste projects, the updated list of eligible grant-funded projects now include focus areas such as environmental justice, building decarbonization, and urban greening and tree planting. The goal of these efforts is to deepen partnerships with community organizations on direct implementation while increasing overall community capacity and engagement with climate action.

4. Directly tackling misinformation



Local governments are emerging as important actors in the global fight against misinformation. While no local government we interviewed had a clear strategy to directly tackle misinformation, our interviews and literature review still revealed some promising practices, often developed in response to the permanent health emergency of by the COVID-19 pandemic and implemented on a relatively isolated basis.

- **Fact check local NewsMedia publications**

Many local governments conduct daily media scans and may choose to reach out to local journalists if they find that articles they published contain wrong information. While this often leads to corrections in the online articles, the delays may lead to inaccurate statements nonetheless taking hold among readers.

Example: City of Vancouver

The City of Vancouver recognized that the pandemic had created a flood of misinformation, particularly on social media, and that this misinformation could be harmful to public health. To combat this, the CoV launched a program to work with local journalists to fact-check information related to COVID-19. Under this approach, journalists were given access to city officials and experts, as well as to information and data related to the pandemic. This allowed them to quickly and accurately verify the information and correct misinformation. The program also helped to build trust between the CoV and the local media, which was important in ensuring that accurate information was disseminated to the public.

Example: City and County of Denver

The City and County of Denver makes use of similar practices and notes that building and maintaining trusting relationships with journalists is the best practice for later requesting corrections when something is published that is factually wrong

- **Requiring transparency and truth-in-advertising**

Another action some local governments have used to prevent deceptive practices is putting in place truth-in-advertising by-laws. Although the examples we found were effective in combatting misinformation, the practice was not in widespread use by the local governments we spoke to due to barriers to implementation.

Example: City of Somerville, Massachusetts

In 2022, the City of Somerville chose to provide counselling on abortion, referrals to abortion providers, or prescriptions for emergency contraception. Other towns are considering similar actions to protect reproductive rights and combat misinformation in their communities .

- **Prebunking and Inoculation**

Prebunking and inoculation are widely recognized as a valuable approach by the local governments we spoke with, though it is for the most part implemented in a relatively ad-hoc manner. Many of the local governments we studied attempt to predict concerns that may arise about proposed new policies and to communicate the right narratives ahead of time. This process faces several challenges, however, as not all initiatives have the privilege of moving slowly enough, elected officials may propose policies and have the City Council vote on them before any pre-emptive communication can be done.

Example: City of Vancouver

About a week before the City Council votes on a new policy, the CoV's communications team will develop an Issue Note. Alongside it, they will try to predict the main questions. The predictions for the FAQ are developed in consultation with internal and external partners, exploring questions about what the initiative means for affordability, equity, and other central concerns the public may have.

Example: City of Austin

The City of Austin utilizes a process that isn't exactly 'prebunking,' but instead involves gathering insights through community engagement to better understand concerns surrounding a particular program, initiative, or policy. This approach requires building relationships and establishing deep engagement with community partners. Even before a program or initiative is announced, community groups may already be discussing the potential impact it could have. If the City has already established relationships with these groups, it can ensure that the community receives accurate information when launching an initiative. The City can best achieve its climate objectives by establishing a foundation of collaboration and trust with a coalition of community leaders and partners.

Effective prebunking also requires frequent assessment of community sentiments. The CoV and the City of Toronto conduct regular surveys on climate perceptions to gather insights on the levels of awareness and the CoV's communication team regularly evaluates comments on its social media accounts for sentiment analysis. Embeddedness within the community and engagement during the policy design process are key to understanding what false narratives may emerge and to conducting pre-bunking effectively.



- **Identifying the Sources of Misinformation**

Another potential intervention relies on ‘sourcing misinformation’ – that is, identifying the most widely spread misinformed statements and the main actors involved in spreading them. Without debunking or responding to misinformation directly, sharing the main sources of misinformation allows citizens to develop an awareness of who shares the information they consume, and is a key aspect of building media literacy.

Example: Protect our Winters’ Fact Avalanche Campaign

A local example is the Fact Avalanche campaign³⁴, led by Protect our Winters Canada (POW) during the 2022 BC local government elections to correct misinformation spread by election candidates, which was fact-checked, corrected where necessary and the results of the fact-check were distributed to the Protect Our Winters network. How it works is that people sign up to be a part of this network, using a phone number or email. Then, when a computer software program detects a potentially false claim about climate change posted on twitter, the array of community users gets a notification, and are tasked with bombarding the tweet with factual information. Members are also provided with helpful links and information to use in response to these tweets. To further integrate this program into a work setting, the Fact Avalanche app is able to be added to a company’s slack account, where everyone in the organization can be notified.

- **Correcting the narrative – debunking**

Reactive techniques like correcting, debunking, or fact-checking misinformation may be effective in some specific contexts, but they are constrained by the fact that the first piece of information encountered about a topic is most often remembered as true even after it is debunked³⁵. Debunking misinformation moreover is both extremely time consuming and socially risky. No local government we spoke with mentioned debunking misinformation shared on social media, except when it was written as direct comments on municipal accounts’ posts.

Example: New York City Council

During the early pandemic, the New York City Council allocated funding to external community organizations to produce reports identifying the key sources and narratives of Covid-19 misinformation and disinformation. The Council then worked with community liaisons and faith leaders to create targeted advertising and leaflets in several languages that addressed the narratives highlighted in the reports³⁶. Similar efforts have been undertaken by regional and local health districts across the United States and Canada.

Alternatively, in 2020 some small towns and rural communities in the U.S saw white nationalist groups using a combination of online disinformation and street teams to create panic and incite violence between supporters of Black Lives Matter, right-wing fake militia groups, and law enforcement agencies. In response, local governments and communities provided information about the groups behind the campaign and their tactics and encourage residents to evaluate information critically and report any suspicious activity to local authorities³⁷.

Best practices for debunking misinformation

Some of the best practices for debunking highlighted in the literature rely on ‘truth sandwiches’: stating the fact, correcting the falsehood, and stating the fact again. The effectiveness of debunking, however, has been shown to be limited, as people with prior exposure to misinformation will often continue to believe it after correction.

In 2020, Walter and Tukachinsky noted that “corrective messages were found to be more successful when they are coherent, consistent with the audience’s worldview, and delivered by the source of the misinformation itself. Corrections are less effective if the misinformation was attributed to a credible source, the misinformation has been repeated multiple times prior to correction, or when there was a time lag between the delivery of the misinformation and the correction”³⁸

Be careful when debunking

Sourcing and debunking can be effective practices in some contexts. Mapping the main spreaders of misinformation and countering their claims are more widely used in response to disinformation (intentionally spread falsehoods) than unintended misinformation. Publicly exposing bad actors’ tactics can generate backlash and mistrust for local governments and should therefore only be taken on with caution. This includes, for instance, sharing the burden of public presence with external partners, neighbouring local governments, or community groups with similar goals, who are willing to use their social media platforms and local networks to spread information about the bad actor’s disinformation tactics. Alternatively, using humour: throughout 2021 and 2022, BC Hydro engaged in a Twitter exchange with Fortis BC, using humour to criticize the gas provider’s attempt to position natural gas as a green fuel.³⁹

- **Partner with civil society organizations focused on misinformation**

These efforts can be pursued in collaboration with partner platforms and organizations specializing in engaging misinformation and disinformation. Numerous civil society organizations focused on misinformation have emerged over the past few years in response to the crisis, providing services like sourcing spreaders, identifying disinformation tactics, fact-checking, debunking, or flagging false statements. A few of the local governments we encountered had collaborated with these local civil society ‘hubs’ working to take on some of their misinformation challenges.



Example: South African

For example, ahead of the 2021 South African municipal elections, the South African Electoral Commission teamed up with Media Monitoring Africa, Google, Facebook, Twitter, and TikTok to manage the impact of disinformation throughout the local campaigns. South Africans were able to report digital offences on the Real 411 online platform⁴⁰ and the relevant social media platform was notified to take action quickly.

Local civil society organizations focused on tackling misinformation

There are similar misinformation-focused civil societies in Vancouver. Nonprofit organization ScienceUpFirst⁴¹, for instance, was founded in Vancouver in 2020 and works with a collective of independent scientists, researchers, health professionals and science communicators across Canada to stop the spread of misinformation. The hub has built a platform to combat misinformation online using strategies and content with proven effectiveness. While they have focused principally on health science misinformation, ScienceUpFirst is expanding into environmental misinformation. Protect Our Winters Canada's Fact Avalanche campaign⁴² sources the main spreaders of misinformation on climate change and notifies subscribers whenever they post misleading or false statements. The SFU Disinformation Project⁴³ created a dashboard that livetracks social media posts referencing COVID-19, climate change, or misinformation.

U.S.-based think tank Rand Corporation also put together a list of tools that fight disinformation online⁴⁴, which provide support for actions like debunking and sourcing, and are mostly freely accessible.



5. Building resilience to misinformation



While the broad adoption of social media as a dominant source of news contributed to the rise of a misinformation crisis, the rise of new technologies like generative AI is expected to only make it worse. Misinformation is a problem that will require local governments to develop both short- and long-term answers.

Some of the insights that we found across case studies and literature review support build long-term resilience to misinformation. They include:

- **Media Literacy**

Media literacy is the set of skills that allows individuals and communities to gather information, particularly online, while sorting through misleading campaigns, phishing scams, and disinformation attempts. Increasing online media literacy has been highlighted as a necessary project to build resilience to misinformation. The Government of Canada has provided funding for more than 50 projects seeking to increase online media literacy and address harms arising from digital misinformation⁴⁵.

Example: District of County of Northumberland

The Corporation of the County of Northumberland received funding from the Government of Canada for a project aimed at addressing and raising awareness around disinformation campaigns and local cybersecurity. The project focuses on educating individuals and organizations in the community about best practices for recognizing and avoiding phishing scams, identifying sources of information that are intentionally misleading.





UNESCO has created several visual resources⁴⁶ to help groups and individuals identify false experts, false content, and attempts at triggering emotional reactions online. These tools are educational materials to help people distinguish between opinion and news pieces, identify and reflect on the motivations of political campaign ads, and overall check the sources for the online information they consume.

- **Citizens' assemblies**

Citizens' assemblies are bodies of citizens who are gathered to deliberate and give recommendations on a given policy issue⁴⁷. Over the past decade, their uptake as governance solutions to complex problems has increased radically, with jurisdictions like Paris⁴⁸ and Brussels⁴⁹ setting up permanent or semi-permanent citizens' assemblies to provide recommendations on local climate policies. A wave of citizens' assemblies also began across local governments in the United Kingdom in 2019⁵⁰, deliberating and guiding policy design on issues from climate change to local air quality. Climate assemblies and have been shown to not only lead to better policies but to have the potential to considerably increase their buy-in in the community. Moreover, they have been shown to successfully decrease mistrust⁵¹ between polarized communities, when designed carefully. These assemblies are generally set up in partnership with local community organizations with support from the government: the Brussels permanent climate assembly, for instance, was designed by local organization G1000⁵² and funded by the City.

Recommendations

We use three criteria to evaluate potential policy options and select recommendations that would fit within the CoV context: feasibility, impact, and additivity. Feasibility reflects the ability of the CoV to implement the option without committing large amounts of new resources. Impact refers to the direct outcomes of the policy option. Finally, additivity reflects to what extent the policy fills a needed gap in the CoV's current approach

Pillar of Action	Feasibility	Impact	Fills a needed gap	Timeframe
 Communicate frequently and consistently				Short-term
 Using the right messaging				Short-term
 Expanding external networks				Short-term to Long-term
 Directly tackling misinformation				Short-term
 Building resilience				Long-term

The CoV is already using best practices when it comes to using the right messages. Not only that, but the CoV also already shares information about its climate initiatives through a large variety of communication channels. Therefore, we recommend that the CoV focus on Directly taking on misinformation, expanding external networks, and building long-term resilience.

We provide an evaluation of the most relevant insights within each of these three selected pillars of action based on the feasibility, impact, and additivity criteria.

Important note: At this stage, it is difficult to evaluate the impact of an intervention on misinformation. There are many practices that have not yet undergone program evaluation.



1. Expanding external networks

Time frame: Short-term and long-term









Recommendation	What that would look like in the City	Evaluation
<p>Engage with the specialized professionals that shape people’s decisions about their homes, transportation, and daily life</p>	<p>The City of Vancouver should expand its partnerships with the specialized experts who shape residents’ final decisions to make changes about their homes, transportation, and daily lives, including electricians, welders, plumbers, builders, car dealers, and bank tellers. Forms of engagement could be holding workshops with union leaders to inform about new technologies and municipal initiatives and to create buy-in. It is important to provide a space for dialogue when engaging with actors who are already experts in their fields.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>
<p>Expand communication about climate initiatives through trusted messengers</p>	<p>The City of Vancouver should build or expand its existing networks with messengers who are trusted by the community to share climate information. This includes climate leaders, environmental NGOs, medical doctors, faith leaders, meteorologists, and academics.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>



1. Expanding external networks cont'd

Time frame: Short-term and long-term









Recommendation	What that would look like in the City	Evaluation
<p>Build a network of thought leaders among municipal staff and willing external partners</p>	<p>Municipal governments should consider creating sanctioned moments where staff can communicate and be thought leaders on topics they are subject matter experts about, maybe in the form of a City experts bureau. In doing so, City staff should be careful about balancing the interests of elected officials, who may be attached to being the spokespeople for certain issues.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>
<p>Create community grants for external organizations to lead climate outreach efforts</p>	<p>The City of Vancouver should commit funding to create grants that would allow community organizations, especially those embedded in neighbourhoods and communities that are marginalized or hard to reach, to lead climate outreach projects on their own. This would both free capacity for City staff as well as expand municipal climate outreach to organizations that are trusted and connected to marginalized and hard to reach groups.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>



1. Expanding external networks cont'd

Time frame: Short-term and long-term









Recommendation	What that would look like in the City	Evaluation
<p>Collaborate with neighbouring local governments</p>	<p>Metro Vancouver is made up of 21 municipalities, of which the CoV is only one. These local governments are deeply interconnected, with integrated transit systems supporting large flows of people across the metropolitan area, businesses operating across city boundaries, and concerns about climate and environmental resilience being closely shared. There is a clear opportunity for collaboration between the City of Vancouver and the neighbouring municipalities when it comes to communicating about climate change, building community trust, and repelling misinformation.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additivity: </p>
<p>Include expanding the City's physical presence in outreach initiatives</p>	<p>The City of Vancouver should become more proactive and increase its physical presence at community events and in hard-to-reach neighbourhoods.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>



2. Directly tackling misinformation

Time frame: Short-term



Recommendation	What that would look like in the City	Evaluation
<p>Partner with civil society organizations focused on misinformation to source misinformation</p>	<p>Partner with local civil society organizations like ScienceUpFirst, ProtectOurWinters, the UBC Centre for the Study of Democratic Institutions, and the SFU Disinformation Project, to identify key spreaders of misinformation and, if needed, implement strategies to expose the tactics used by the worst spreaders. These partnerships could also be used to refine and expand efforts to prebunk and inoculate against misinformation.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>
<p>Prebunk information</p>	<p>During the policy design process, the City of Vancouver should, as much as possible, commit resources to predicting the misinformed narratives that are likely to arise in response to the policy, and debunk them on social media and through trusted partners' communication before they arise.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>



3. Building Resilience to Misinformation

Time frame:

Long-term



Recommendation	What that would look like in the City	Evaluation
<p>Build media literacy education</p>	<p>The City of Vancouver should work with the Province of British Columbia to integrate media literacy education in local school curricula. It is urgently important that the next generation be prepared to critically navigate the increasingly complex media environment they will live in.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>
<p>Reintroduce deliberative forums for the design and implementation of climate policies</p>	<p>The City of Vancouver should set up a citizens' assembly or citizens deliberative forum in the coming three years to determine the right balance of incentives and regulations that could lead to widespread adoption of heat pumps in the existing building stock, or to develop a citizen-backed strategy for city-wide densification.</p> <p>Vancouver has past experience creating climate assemblies through the Grandview-Woodland Community Plan. Canadian experts include Toronto-based Mass LBP, which lead and develop deliberative forums and climate assemblies, and Vancouver-based Participedia, a global network of citizens' assemblies experts.</p> <p>Responding to the rise of misinformation and the growing crisis of trust that is likely to accompany it will require innovative governance from local governments.</p>	<p>Feasibility: </p> <p>Impact: </p> <p>Additionality: </p>



3. Building Resilience to Misinformation cont'd

Time frame: Long-term



Recommendation	What that would look like in the City	Evaluation
Develop a long-term misinformation strategy	In collaboration with the federal and the provincial government and using resources provided by local government networks like ICLEI, the Strong Cities Network, the Local Government Information Unit, or the Federation of Canadian Municipalities, the City of Vancouver should start a conversation to develop a misinformation strategy that is sustainable in the long-run and addresses the long-term risks of a growing misinformation crisis.	<p>Feasibility:</p> <p>●●●●●</p> <p>Impact:</p> <p>●●●●●</p> <p>Additionality:</p> <p>●●●●●</p>

Conclusion

This report laid out a variety of potential interventions the City of Vancouver could take on to engage misinformation and communicate with its residents to increase support and understanding for municipal climate initiatives.

Studies of the impact of misinformation at the local level are still limited and local governments have traditionally not engaged in tackling it. Out of the 15 local governments we interviewed, none had a designated misinformation strategy. However, the ongoing 15-minute cities 'debate' is visible proof of the urgent need for local governments to understand what is within their mandate and their abilities when it comes to tackling misinformation.

Like climate change itself, misinformation is a complex social problem requiring social solutions rather than technical ones. It is critical that local governments remember that not all opposition to climate initiatives is misinformation and that they cannot be the arbiters of truth. Local governments have to strike the balance between correcting false narratives and listening to the concerns of their residents. Tasks of debunking, flagging, or listening and educating should be done in conjunction with its residents and communities.

Moreover, local governments' approaches to engaging climate misinformation should always be aware of how complex and emotional the climate crisis is for residents. This carefulness when tackling misinformation is especially important in the long run: if local governments wish to remain a trusted voice, they need to be wary of battling misinformation with too much stringency.

Moreover, misinformation is a crisis that is expected to worsen. Local governments should consider adopting solutions and designing strategies not only to tackle the immediate problem but to mitigate the effects of the crisis in the long-run. We believe that a starting point to building these short and long-term strategies towards climate misinformation can be separated into five pillars of action; Communicate frequently and consistently, Use relevant messages, Build strong external networks, Directly tackle misinformation, and Build resilience to misinformation. Of these five we recommend that the CoV focus its attention on the last three.

Looking forward, this project creates an opportunity for the City of Vancouver to take a leadership role and opens the way for other local governments to engage with climate misinformation. This topic, as a challenge and a field of study is still growing, and as local governments ramp up their climate initiatives, misinformation will likely rise with it. Now is the time to act.

References

1. HiveMind. (2022). Disinformation and 7 Common Forms of Information Disorder. Retrieved April 18, 2023, from The Commons website: <https://commonslibrary.org/disinformation-and-7-common-forms-of-information-disorder/>
2. Wardle, C. (2020). Understanding Information disorder. Retrieved from First Draft website: <https://firstdraftnews.org/long-form-article/understanding-information-disorder/>
3. Jarrahi, A., & Safari, L. (2021). FR-Detect: A Multi-Modal Framework for Early Fake News Detection on Social Media Using Publishers Features. *ArXiv:2109.04835 [Cs]*. Retrieved from <https://arxiv.org/abs/2109.04835>
4. D. Shome, Marx, S., Appelt, K. C., Arora, P., Balstad, R., Broad, K., ... Weber, E. (2009). The psychology of climate change communication: a guide for scientists, journalists, educators, political aides, and the interested public. Retrieved April 19, 2023, from Semantic Scholar website: <https://www.semanticscholar.org/paper/The-psychology-of-climate-change-communication%3A-a-Shome-Marx/6ad9727ca501a569a19854e031ec8173d1850d8b>
5. Council of Canadian Academies. (2023). Fault Lines. Retrieved from CCA Reports website: <https://cca-reports.ca/reports/the-socioeconomic-impacts-of-health-and-science-misinformation/>
6. Jerónimo, P., & Esparza, M. S. (2022). Disinformation at a Local Level: An Emerging Discussion. *MDPI*, 10(2), 15. <https://doi.org/10.3390/publications10020015>
7. Organisation for Economic Co-operation and Development. (2021). *Good Practice Principles for for public communication response to mis & dis-information*. Retrieved from <https://www.oecd.org/gov/open-government/good-practice-principles-public-communication-responses-to-mis-and-disinformation.pdf>
8. Sharifi, A., & Khavarian-Garmsir, A. R. (2020). The COVID-19 pandemic: Impacts on Cities and Major Lessons for Urban planning, design, and Management. *Science of the Total Environment*, 749(142391). <https://doi.org/10.1016/j.scitotenv.2020.142391>
9. Kabell, M. (2016). 'Nations talk, but cities act' on green policies. *Euobserver*. Dec. 22, 2014: <https://euobserver.com/regions/127018>
10. Sharifi, A., & Khavarian-Garmsir, A. R. (2020). The COVID-19 pandemic: Impacts on Cities and Major Lessons for Urban planning, design, and Management. *Science of the Total Environment*, 749(142391). <https://doi.org/10.1016/j.scitotenv.2020.142391>
11. Cook, J., Lewandowsky, S., & Ecker, U. K. H. (2017). Neutralizing misinformation through inoculation: Exposing misleading argumentation techniques reduces their influence. *PLOS ONE*, 12(5), e0175799. <https://doi.org/10.1371/journal.pone.0175799>
12. Human Rights Watch 2018 *Germany: Flawed Social Media Law*. Human Rights Watch. Published online on February 14, 2018: <https://www.hrw.org/news/2018/02/14/germany-flawed-social-media-law#>
13. Colomina, C., Margalef, S., Youngs, R., & Parliament, E. (2021). *The impact of disinformation on democratic processes and human rights in the world @Adobe Stock EN STUDY*. Retrieved from [https://www.europarl.europa.eu/RegData/etudes/STUD/2021/653635/EXPO_STU\(2021\)653635_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2021/653635/EXPO_STU(2021)653635_EN.pdf)
14. Dawson, T. (2023). 15-minute cities: Everything you need to know, from the plans to the conspiracies. Retrieved March 15, 2023, from nationalpost website: <https://nationalpost.com/news/canada/15-minute-cities-guide>
15. Patterson, C., & Barrie, L. (2023). The Case for 15-Minute Cities. Retrieved April 18, 2023, from The Tyee website: <https://thetyee.ca/Analysis/2023/03/15/Case-For-15-Minute-Cities/>
16. Georgieva, K. (2023). Debunking the 15-minute-city conspiracy theory — and why it erupted at Essex County council. *CBC.ca*. Retrieved from <https://www.cbc.ca/news/canada/windsor/15-minute-city-conspiracy-theory-essex-county-council-1.6808005>
17. Medina, M. Á. (2023). 15 mitos sobre la ciudad de los 15 minutos, la última paranoia de los conspiracionistas. Retrieved April 19, 2023, from El País website: <https://elpais.com/clima-y-medio-ambiente/2023-03-04/15-mitos-sobre-la-ciudad-de-los-15-minutos-la-ultima-paranoia-de-los-conspiracionistas.html>
18. Institute for Strategic Dialogue. (2023). Conspiracy on 15-minute cities may have worrying, long-term impacts on climate action. Retrieved April 18, 2023, from ISD website: <https://www.isdglobal.org/isd-in-the-news/conspiracy-on-15-minute-cities-may-have-worrying-long-term-impacts-on-climate-action/>
19. Georgieva, K. (2023). Debunking the 15-minute-city conspiracy theory — and why it erupted at Essex County council. *CBC.ca*. Retrieved from <https://www.cbc.ca/news/canada/windsor/15-minute-city-conspiracy-theory-essex-county-council-1.6808005>
20. Capital Regional District. (2022). CRD Launches Home Energy Navigator Program. Retrieved April 18, 2023, from www.crd.bc.ca website: <https://www.crd.bc.ca/about/news/article/2022/11/08/crd-launches-home-energy-navigator-program>

References

20. Capital Regional District. (2022). CRD Launches Home Energy Navigator Program. Retrieved April 18, 2023, from www.crd.bc.ca website: <https://www.crd.bc.ca/about/news/article/2022/11/08/crd-launches-home-energy-navigator-program>
21. Community Energy Association. (2022). Retrofit Assist Program Design. Retrieved April 18, 2023, from Community Energy Association website: <https://www.communityenergy.ca/projects/retrofit-assist-program-design/>
22. Marshall, G. (2014). *Don't even think about it: why our brains are wired to ignore climate change*. New York: Bloomsbury.
23. Webster, R., Corner, A., Clarke, J., & Capstick, S. (2020). Communicating climate change during the Covid-19 crisis. In *Climate Outreach*. Retrieved from <https://climateoutreach.org/reports/communicating-climate-during-covid-19/>
24. Robinson, S. (2019). Climate Communications 101: the Trusted Messenger | Institute for Global Sustainability. Retrieved April 18, 2023, from www.bu.edu website: <https://www.bu.edu/igs/2019/04/16/trusted-messenger/>
25. United Nations. (2023). Youth in Action. Retrieved from United Nations website: <https://www.un.org/en/climatechange/youth-in-action>
26. Wang, J., Long, R., Chen, H., & Li, Q. (2022). How do parents and children promote each other? The impact of intergenerational learning on willingness to save energy. *Energy Research & Social Science*, 87(102465), 102465. <https://doi.org/10.1016/j.erss.2021.102465>
27. Government of Canada. (2023). Online disinformation. Retrieved from www.canada.ca website: <https://www.canada.ca/en/canadian-heritage/services/online-disinformation.html>
28. Canadian Heritage. (2023). Government of Canada funds projects addressing the growing problem of online mis/disinformation. Retrieved April 18, 2023, from www.canada.ca website: <https://www.canada.ca/en/canadian-heritage/news/2023/01/government-of-canada-funds-projects-addressing-the-growing-problem-of-online-misdisinformation.html>
29. City of Edmonton. (2023). Energy Transition Leadership Network | City of Edmonton. Retrieved April 18, 2023, from www.edmonton.ca website: https://www.edmonton.ca/city_government/city_organization/energy-transition-leadership-network
30. City of Toronto. (2023). TransformTO. Retrieved from City of Toronto website: <https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/transformto/>
31. Cheung, R. (2023). Neighbourhood Climate Action Champions. *City of Toronto*. Retrieved from <https://www.toronto.ca/services-payments/water-environment/live-green-toronto/neighbourhood-climate-action-champions/>
32. City and County of Denver. (2023). Promotoras/Community Connectors: SNAP Outreach Funding Opportunity. Retrieved April 18, 2023, from www.denvergov.org website: <https://www.denvergov.org/Government/Agencies-Departments-Offices/Agencies-Departments-Offices-Directory/Denver-Human-Services/Be-Involved/Partner-With-Us/Grants/PromotorasCommunity-Connectors>
33. Holder, S. (2022). New England Cities Fight Abortion Misinformation With Truth-in-Ads Laws. *Bloomberg.com*. Retrieved from <https://www.bloomberg.com/news/articles/2022-08-18/somerville-massachusetts-leads-cities-in-targeting-crisis-pregnancy-centers>
34. Protect Our Winters. (2023). Home | Protect Our Winters. Retrieved April 18, 2023, from factavalanche.protectourwinters.ca website: <https://factavalanche.protectourwinters.ca/>
35. Heer, T., Gurling, K., Bugg, E., & Heath, C. (2021). *MISINFORMATION IN CANADA RESEARCH AND POLICY OPTIONS Misinformation in Canada Research and Policy Options*. Retrieved from https://evidencefordemocracy.ca/sites/default/files/reports/misinformation-in-canada-evidence-for-democracy-report_.pdf
36. Thome, M. (2021). Misinformation and disinformation: how can local government tackle it? Retrieved April 18, 2023, from LGiU website: <https://lgiu.org/misinformation-and-disinformation-how-can-local-government-tackle-it/>
37. RuralOrganizing.org. (2020). Resource: Fighting Misinformation In Small Towns and Rural Communities | RuralOrganizing.org. Retrieved April 18, 2023, from ruralorganizing.org website: <https://ruralorganizing.org/blog/resource-fighting-misinformation-small-towns-and-rural-communities>
38. Walter, N., & Tukachinsky, R. (2019). A Meta-Analytic Examination of the Continued Influence of Misinformation in the Face of Correction: How Powerful Is It, Why Does It Happen, and How to Stop It? *Communication Research*, 47(2), 009365021985460. <https://doi.org/10.1177/0093650219854600>

References

39. BChydro. (2022). <https://twitter.com/bchydro/status/1521866506014904323>. Retrieved April 18, 2023, from Twitter website: <https://twitter.com/bchydro/status/1521866506014904323>
40. Real411. (2023). Report Digital Disinformation| Real411. Retrieved April 18, 2023, from www.real411.org website: <https://www.real411.org/>
41. ScienceUpFirst. (2023). ScienceUpFirst. Retrieved April 18, 2023, from ScienceUpFirst website: <https://www.scienceupfirst.com/>
42. Protect Our Winters. (2022). Protect Our Winters, The Fact Avalanche. Retrieved from factavalanche.protectourwinters.ca website: <https://factavalanche.protectourwinters.ca/>
43. Simon Fraser University. (2023). The Disinformation Project. Retrieved April 18, 2023, from www.sfu.ca website: <https://www.sfu.ca/communication/research/labs/the-disinformation-project.html>
44. RAND Corporation. (2022). Tools That Fight Disinformation Online. Retrieved April 18, 2023, from www.rand.org website: <https://www.rand.org/research/projects/truth-decay/fighting-disinformation/search.html>
45. Canadian Heritage. (2021). Ongoing Support for Research and Media Literacy Projects as Canada Continues to Fight Online Disinformation. Retrieved April 18, 2023, from www.newswire.ca website: <https://www.newswire.ca/news-releases/ongoing-support-for-research-and-media-literacy-projects-as-canada-continues-to-fight-online-disinformation-816455316.html>
46. UNESCO. (2023). Visual resources to download and share. Retrieved April 18, 2023, from UNESCO website: <https://en.unesco.org/covid19/communicationinformationresponse/visualresources>
47. Participedia. (2023a). Citizens' Assembly – Participedia. Retrieved from participedia.net website: <https://participedia.net/method/4258>
48. Buergerrat. (2020). Climate Assembly in Paris. Retrieved April 18, 2023, from www.buergerrat.de website: <https://www.buergerrat.de/en/news/climate-assembly-in-paris/>
49. Buergerrat. (2023). Permanent climate assembly in Brussels. Retrieved April 18, 2023, from www.buergerrat.de website: <https://www.buergerrat.de/en/news/permanent-climate-assembly-in-brussels/>
50. The Constitution Unit. (2022). Local citizens' assemblies in the UK: a second report card. Retrieved April 18, 2023, from The Constitution Unit Blog website: <https://constitution-unit.com/2022/03/25/local-citizens-assemblies-in-the-uk-a-second-report-card/>
51. FISHKIN, J., SIU, A., DIAMOND, L., & BRADBURN, N. (2021). Is Deliberation an Antidote to Extreme Partisan Polarization? Reflections on "America in One Room." *American Political Science Review*, 115(4), 1464–1481. <https://doi.org/10.1017/s0003055421000642>
52. G1000. (2023). Doing Democracy Better. Retrieved April 18, 2023, from G1000 website: <https://www.g1000.org/en>
53. MASS LBP. (2023). MASS LBP. Retrieved April 18, 2023, from MASS LBP website: <https://www.masslbp.com/>
54. Participedia. (2023b). Participedia. Retrieved April 18, 2023, from participedia.net website: <https://participedia.net/>
55. Local Governments for Sustainability Canada. (2023). ICLEI Canada | Local Governments for Sustainability. Retrieved April 18, 2023, from [Icleicanada.org](http://icleicanada.org) website: <https://icleicanada.org/>
56. Strong Cities. (2023). Home. Retrieved April 18, 2023, from Strong Cities Network website: <https://strongcitiesnetwork.org/en/>
57. Local Government Information Unit. (2023). LGIU. Retrieved April 18, 2023, from lgiu.org website: <https://lgiu.org/>
58. Federation of Canadian Municipalities. (2023). Home | Federation of Canadian Municipalities. Retrieved April 18, 2023, from fcm.ca website: <https://fcm.ca/en>